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Four hundred and forty-eighth meeting.

February 9, 1858. — Monthly Meeting.

The Academy met at the house of the Rev. Dr. Frothingham.

The President in the chair.

The Corresponding Secretary read letters, from E. B. Elliott, accepting Fellowship; from the Royal Institution of Great Britain, November 18, 1857, and the Geological Society of London, December 3, 1857, acknowledging the receipt of the Academy's publications.

Mr. Folsom exhibited to the Academy a copy of an ancient inscription obtained by him at Susa, on the north coast of Africa, some years since. The block bearing the inscription was placed in the corner of a shed-like building, and was probably the pedestal of a statue. The inscription is as follows: —

L·TERENTIOAQVI	L. Terentio Aqui-
LAEGRATTIANO	læ Grattiano
QVAESTORIPRO	Quæstori Pro-
VINCIAEAFRICAE	vinciæ Africæ
AMICIOBPAREM	Amici ob parem
INVNIVERSOSATQVE	in universos atque
TALEMETPROPRI	talem et propri-
VMINSINGVLOS	um in singulos
HONOREM	honorem.

The exact signification of this inscription was commented on by several gentlemen, and its obscurity noticed. Professor Torrey suggested the word AEQVITATEM for the words ATQVE TALEM, as a reading which clears up the sense; Mr. Folsom having spoken of the inscription as being made out with difficulty, thus leaving room for the possibility of an error in copying.

Dr. W. F. Channing exhibited specimens of lithographs made by means of a new application of photography. The process is known as Photo-lithography, and consists in receiving upon a prepared lithographic stone the image of the object. After many experiments, Messrs. J. H. Cutting, Photographer, and L. H. Bradford, Lithographer, have succeeded in so preparing the stone that the figure thrown upon it from the camera is fixed permanently there, and can be printed from as an ordinary drawing. The discovery promises to be of very great value in the arts.

Professor A. Gray, referring to the popular opinion that squashes are spoiled by pumpkins, and melons by cucumbers or squashes, &c., when grown near each other, in consequence, as was thought, of cross-fertilization, remarked that it was a question whether the deterioration or alteration showed itself in the fruit of the season, that is, in the altered character of the ovary which had been acted upon by alien pollen, or only in the next generation, i. e. in the cross-bred fruit. The former was the popular idea, or at least the more common one; but if it was a case of cross-breeding, the alteration would naturally be looked for only in the progeny. As throwing some light upon this question, he gave an account of Naudin's recent investigations upon the cultivated *Cucurbitaceæ*, showing that the *species* of *Cucurbita* (which, as to those in ordinary cultivation, Naudin had reduced to three or four) refuse to hybridize; but that the application of the pollen of one species to the stigma of another, from which its own pollen is excluded, often causes the fruit to set and grow to its full size, although no embryos are formed in the seeds. Thus it seemed probable that alien pollen really acted upon the ovary in the cases referred to, and that the popular belief was correct. In confirmation of this view, Professor Gray exhibited several ears of Indian corn, — such as are familiar in the country, — in which two, and even three or four, sorts of grains (such as sweet-corn, yellow and white corn, &c.) occurred intermixed upon the same ear. This appeared to demonstrate an immediate action of the pollen upon the ovary, altering the character of the coat and of the albumen of the grain. This might, or might not, be accompanied by cross-fertilization of the embryo, — a point which it would be interesting to determine by raising plants from the different grains of one ear, guarding them carefully against all extraneous pollen, and noting the character of the resulting grain.

Dr. A. A. Hayes said the fact had been determined by direct experiment ten or twelve years ago, when the question arose whether the same stalk would furnish to each variety upon it its normal quantity of phosphates. It was found that this was the case, and each variety was reproduced the next year from the seed thus raised. At that time he found that all the varieties contain a salt of the peroxide of iron, instead of the protoxide.

Professor W. B. Rogers, referring to the discussion at the previous meeting on the noxious influence of various gases, particularly of carbonic acid and oxide, said, that, although all the recent Continental writers concur in regarding carbonic acid as simply negative in its influence, he had been surprised to find that the most recent English authorities still charge the whole of the pernicious effects of the inhalation of the fumes of burning charcoal to this gas, rather than to the oxide.

Dr. W. F. Channing thought that one source of the injury from breathing impure air was the interruption to the process of endosmose and exosmose, which it was well known was produced by even a slight admixture of carbonic acid.

Professor Rogers suggested that in crowded rooms organic compounds have a good deal to do with the deterioration of the air.

Four hundred and forty-ninth meeting.

March 9, 1858. — MONTHLY MEETING.

The Academy met at the house of the Hon. Josiah Quincy.

The PRESIDENT in the chair.

The Corresponding Secretary read a letter from Sir John Herschel, acknowledging the donation of the Academy's Transactions; also one from Mr. Henry T. Parker, offering his services as agent for the purchase of books for the Academy in England.